

Wadi Qaddum

RESISTIVE INFRASTRUCTRE

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Wadi Qaddum
resistive infrastructure

Final Project

Pro-active studio

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Architecture and Town Planning

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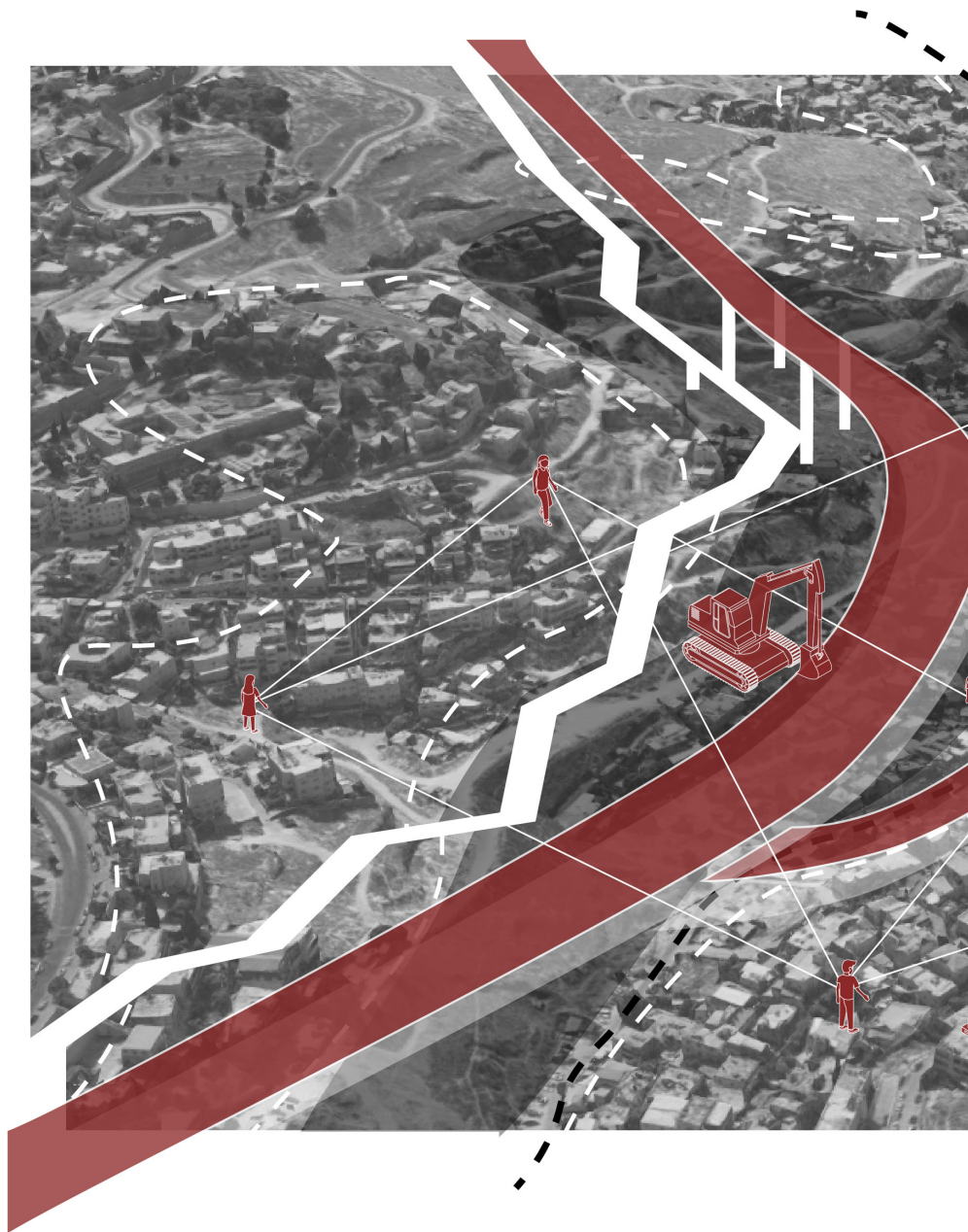
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Introduction

This project examines the asymmetric relationship between formal infrastructure and informal urban life in Wadi Qaddum, a marginalized neighborhood in East Jerusalem shaped by decades of geopolitical conflict, systemic neglect, and community-driven survival. Positioned at the intersection of contested planning and lived resistance, Wadi Qaddum offers a powerful lens through which to explore how imposed infrastructure specifically the Eastern Ring Road—functions not as a connector but as a mechanism of spatial fragmentation and control.

While the road is framed as a development project, it in fact deepens existing inequalities by bypassing and dividing Palestinian neighborhoods, threatening the continuity of local space and life. In contrast, the residents of Wadi Qaddum—most of whom hold only permanent residency without full citizenship rights—have developed informal systems of spatial production rooted in extended family networks (*hamula*), mutual aid, and incremental construction. These systems constitute not only a means of survival in the face of exclusion, but also a form of urban agency and resistance.

This research critically interrogates the clash between top-down planning and bottom-up resilience, challenging conventional approaches to urban development in conflict zones. By focusing on the frictions and overlaps between formal and informal infrastructures. Therefore, I ask: **How can the intersection of formal engineering infrastructures and community based infrastructure in Wadi Qaddum act as a mechanism of resistance against spatial collapse, while also fostering empowerment within the locals?**





History

Wadi Qaddum, ras-al amud, is a neighborhood in East Jerusalem southeast of the Old City. The reality in East Jerusalem, is deeply shaped by key historical events, Following the 1948 war, West Jerusalem was occupied by Israel while East Jerusalem fell under Jordanian rule.

This war displaced approximately 780,000 Palestinians, many of whom lost homes in neighborhoods like Talbieh and Baq'a, which were subsequently settled and gentrified by Jewish immigrants.¹

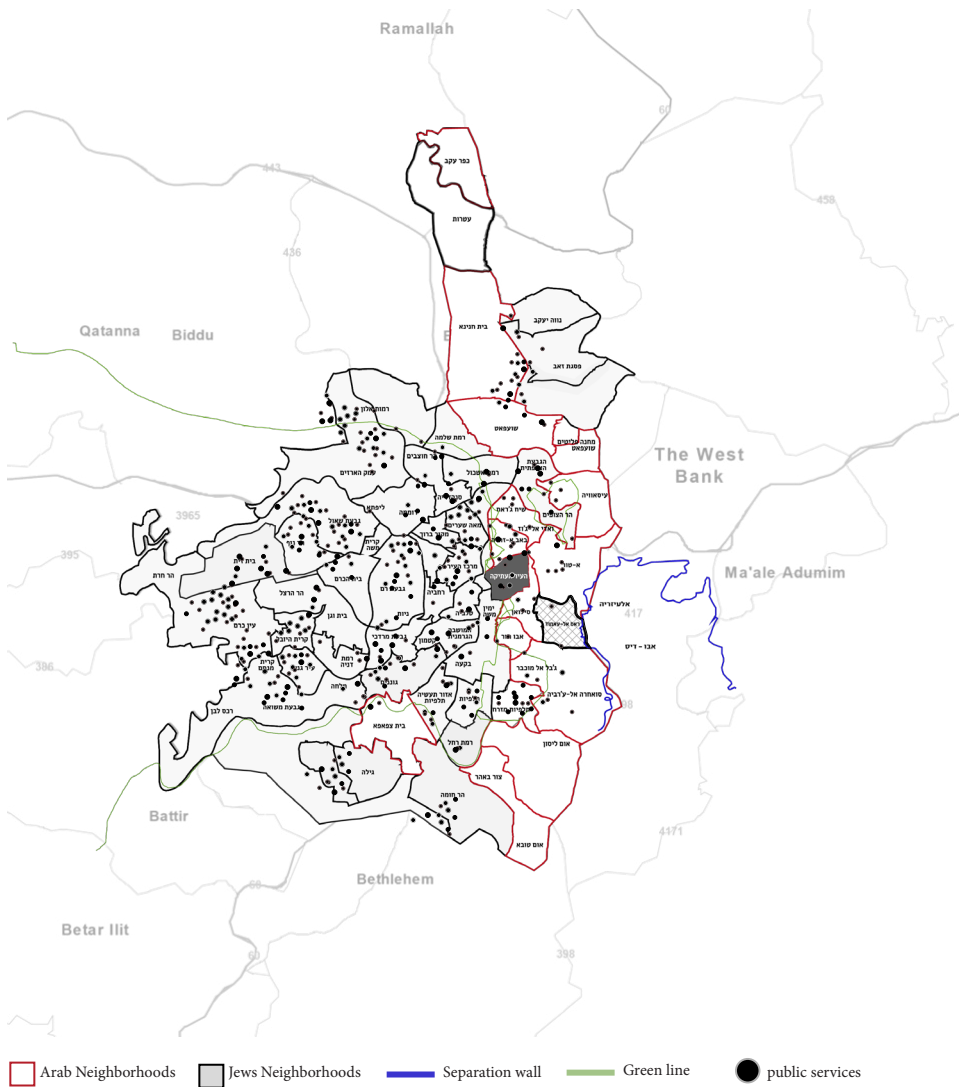
In 1949, Israel declared West Jerusalem as state-occupied territory and confiscated Palestinian properties under the Absentee Property Law.

The 1967 war marked a turning point when Israel occupied and annexed East Jerusalem, enlarging the city's municipal boundaries and incorporating Palestinian areas under Israeli law—an act unrecognized internationally.

These geopolitical shifts have cemented Jerusalem as a central battle ground for ethnic and territorial conflict. On one hand, Israel has maintained control through legal, administrative, and spatial strategies; on the other hand, Palestinians continue to struggle for their urban and political rights, striving for recognition and access to basic services in a city that remains deeply contested.²

1 Middle East Research and Information Project, "Israel and the Palestinians, 1948–1988," MERIP 151 (May 1988),

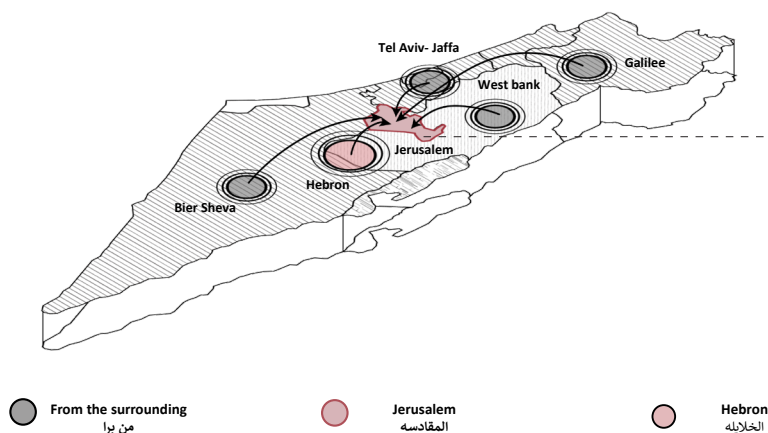
2 Yosef Jabareen, "The Right to Space Production and the Right to Necessity: Insurgent versus Legal Rights of Palestinians in Jerusalem," Planning Theory, July 2015.



History

In addition to that these transformations are reflected in both the social composition and physical development of the Arab neighborhoods in general and Wadi Qaddum in particular. The Arab community is composed of three main groups: original Arab families from within Jerusalem; families who relocated from other parts of the country; and, most notably, large waves of families.

from Hebron region who began settling in the city during the late Ottoman period, as part of broader demographic strategies aimed at reinforcing the Muslim presence in Jerusalem.³

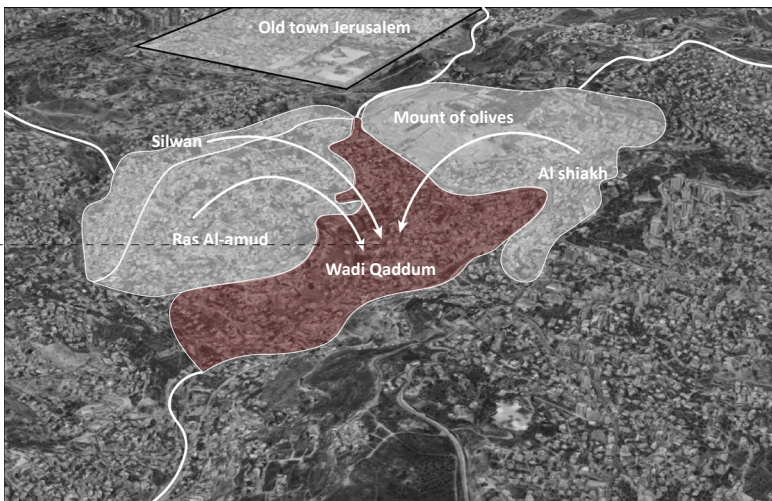


3 Murad al-Bustami, "Migration of the Khalayleh to Jerusalem Before 1948: Departure and the Curse of the City," Institute for Palestine Studies.

Many of these families initially established themselves in adjacent neighborhoods such as Silwan and Ras al-Amud before gradually expanding into the open land that would become Wadi Qaddum.⁴

As a result, the neighborhood's development has been shaped not only by planning regimes but also by patterns of migration and social need.

Wadi Qaddum today forms part of the continuous urban fabric linking Ras al-Amud to Silwan, and its physical form reflects decades of informal growth driven by demographic pressures and structural neglect.



⁴ Saeed, personal interview by author, november 12, 2025.

Situation

Today, Wadi Qaddum is home to over 12,000 residents, forming part of the approximately 350,000 Palestinians living primarily in East Jerusalem.

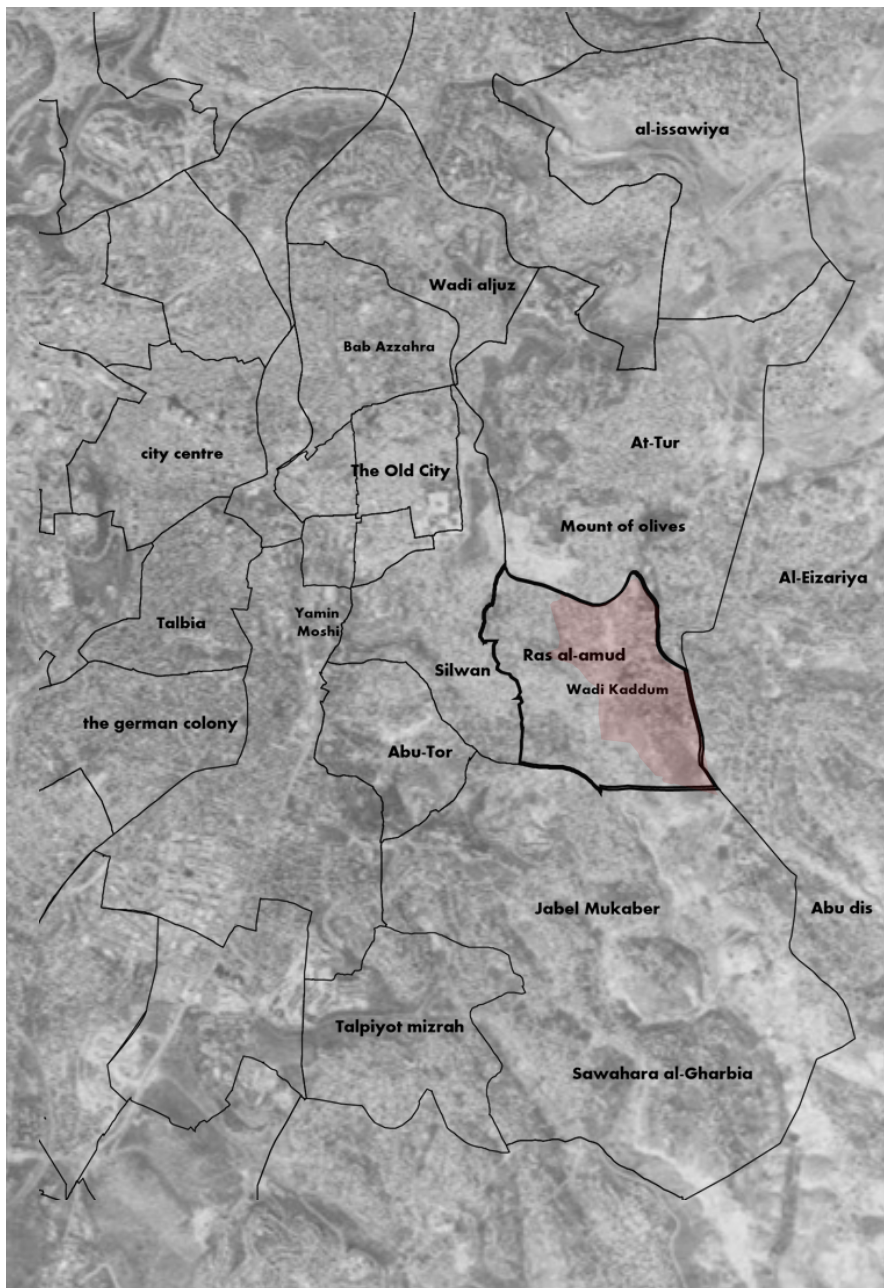
Most of these residents hold the legal status of permanent residents not an Israeli citizen, which holds an Israeli identity card but not an Israeli passport and is not entitled to vote in Knesset elections.³

This status often leads to systemic inequality in rights and access to services provided by the municipality and the state, particularly in the areas of official urban planning and public services.

Residents face reduced access to building permits, inadequate healthcare, and limited educational opportunities. These conditions reinforce broader patterns of exclusion and marginalization within the urban fabric of Jerusalem.⁵

Wadi Qaddum serves as a case study of East Jerusalem neighborhoods that suffer from severe infrastructural neglect. The area is marked by narrow, unpaved streets, a lack of adequate public transportation, and a significant shortage of essential public services—conditions that further exacerbate the socio-economic challenges faced by its residents.

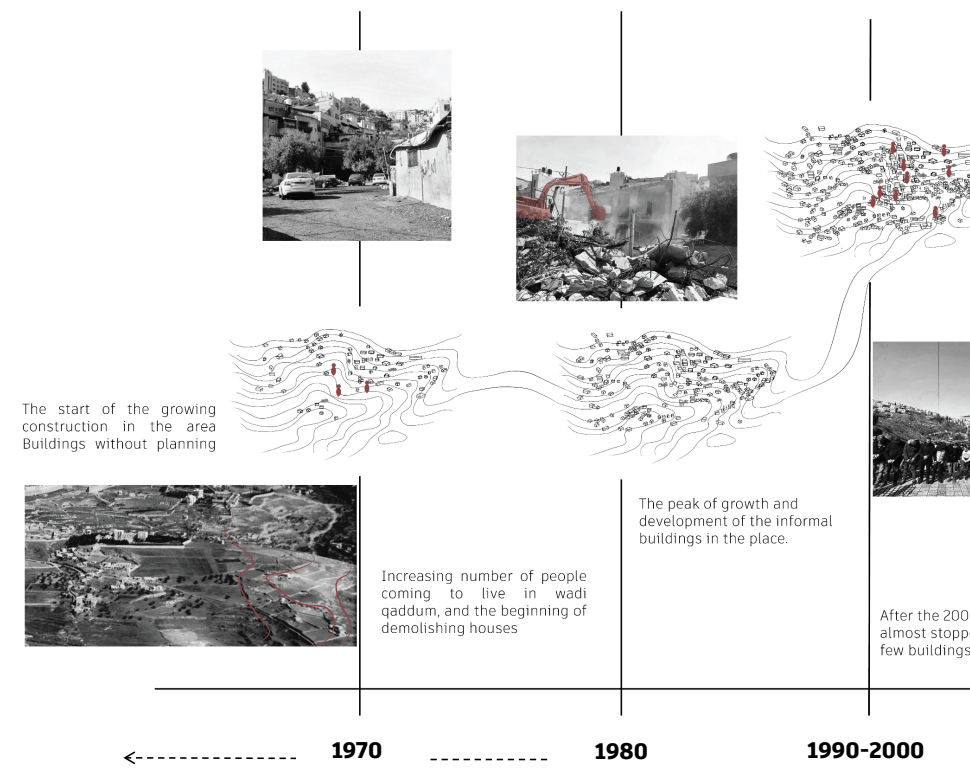
5 Ir Amim, "Permanent Residency: A Temporary Status Set in Stone," June 1, 2012.



Situation

Until around seventy years ago, there were very few residents, but from the 1970s onward, in the absence of formal planning and building permits for Palestinians, the neighborhood began to expand spontaneously.⁶

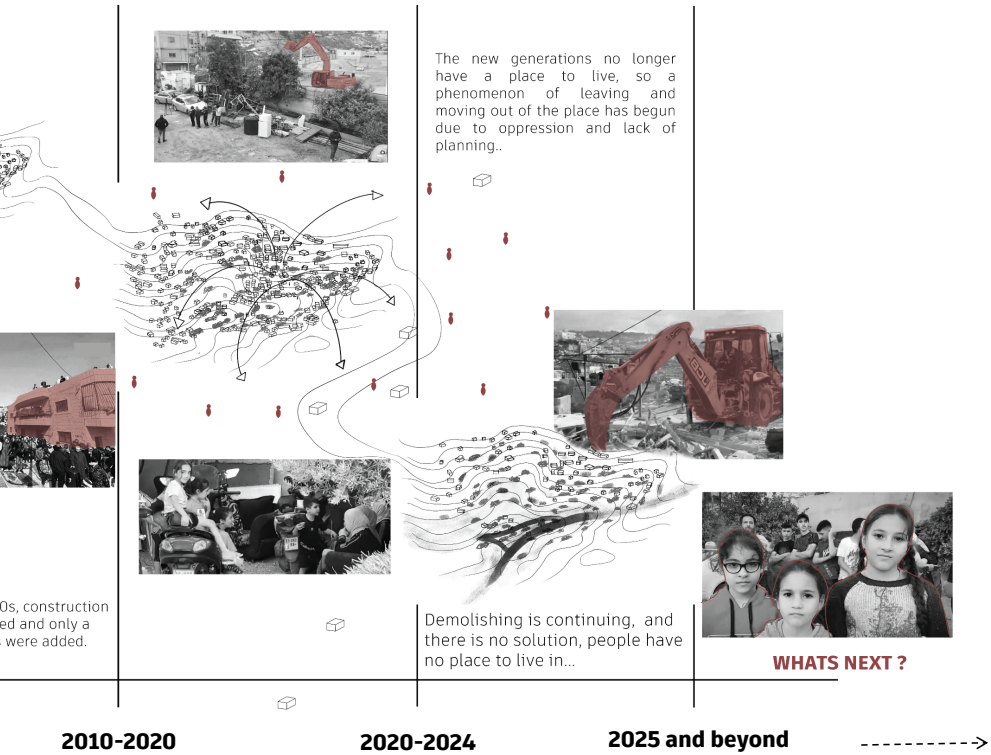
This process intensified in the 1990s, when mounting housing demand and restrictive Israeli planning policies—particularly



6 Ahmad Asmar, Ras al-Amud and the Wadi Qaddum Sub-Neighborhood: Infrastructure Research and Evaluation of Arab Neighborhoods in East Jerusalem.

permit denials and home demolitions—led to widespread informal construction.

Since the early 2000s, however, building activity has come to a near standstill, leaving the neighborhood in a state of prolonged uncertainty about the future of its younger generations.



Formal Planning Mechanisms

Formal Planning Mechanisms

The Israeli planning policies in East Jerusalem have long been instrumental in fragmenting Arab neighbourhoods and limiting their development. As Dumper (2014) discusses, since 1967, zoning laws, expropriations, and infrastructural projects have been used to control Arab areas while restricting their expansion. Large portions of land have been designated as “green spaces” or “state lands,” preventing construction and forcing residents into overcrowded conditions.⁷



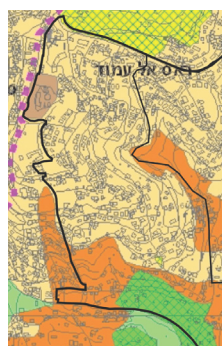
1970

Tab'a'am/9 Jerusalem Local
Outline Plan – ענף-ירושלים



1980

Outline Plan 2668- תוכנית
2668 מתאר



2000

Outline Plan Jerusalem
/ מתאר ירושלים 2000

 Residential Area No. 5

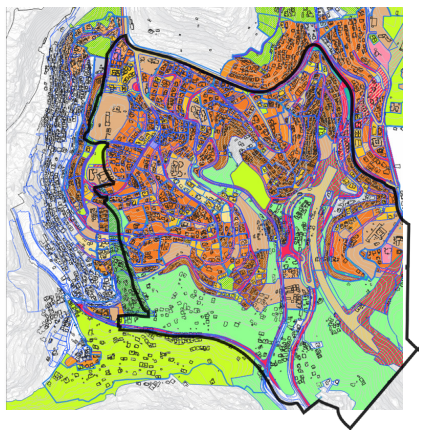
 Residential Area No. 6

 Future planning area

 Open public area

⁷ Michael Dumper, *Jerusalem Unbound: Geography, History, and the Future of the Holy City* (New York: Columbia University Press, 2014), 54–60.

The neighborhood remains subject to formal master plans that have failed to provide practical solutions for its residents. These plans for Wadi Qaddum do not aim to improve space or secure the community’s future but rather focus on restricting construction, neglecting the urban development processes of the area. Furthermore, formal planning lacks public participation, disregards the needs of residents, and is driven by a technical approach that overlooks the human dimension of the space.



1998-2000

2017-2018

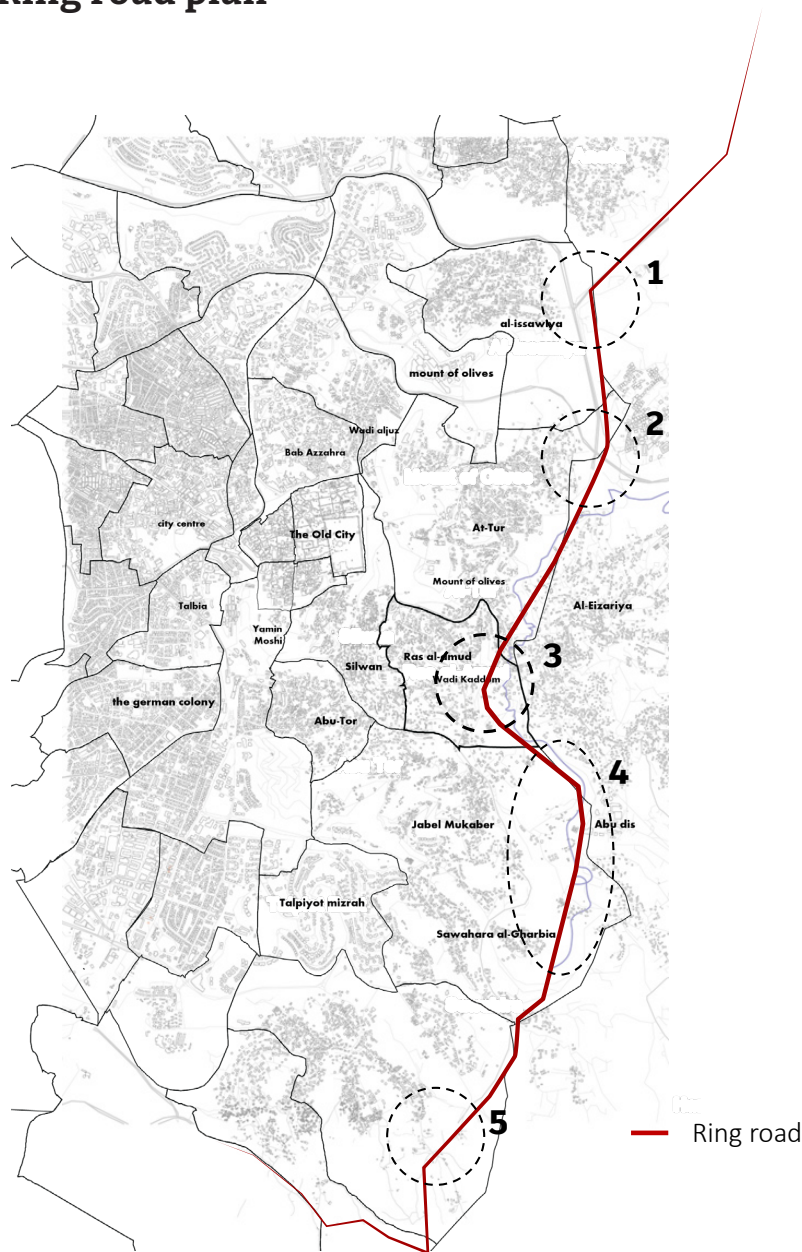
2000-2001
תוכנית

Eastern Ring Road plan – ב- 4585

Ras al amud master plan – תכנית אב

- | | | |
|---|--|---|
|  Open landscape area |  Public buildings area |  Public park |
|  Sports and Recreation Area |  Residential Area No. 1 | |

Ring road plan



The Eastern Ring Road project exerts a significant spatial impact on the areas through which it is planned to pass, it is designed to encircle East Jerusalem, connecting various Israeli settlements while bypassing Palestinian communities. This has prompted considerable criticism and opposition. Critics contend that its primary objective is to strengthen Israeli control over East Jerusalem while fragmenting Palestinian neighborhoods into disconnected enclaves, thereby impeding their territorial contiguity and socio-economic development.⁸

In the case of wadi qaddum the road will pass directly through the area, resulting in the confiscation of over 25 dunams of private land. Furthermore, more than 15 homes will be demolished without adequate compensation for the residents. And it will divide the neighbourhood into isolated “islands,” severing existing pathways and limiting future development. This situation will leave the affected individuals in a state of insecurity, displacement, and uncertainty.⁹

This project exemplifies a broader pattern where large-scale developments disproportionately impact marginalized communities. Globally, such mega-projects often result in the displacement of vulnerable populations, leading to loss of livelihoods, cultural disintegration, and socio-economic marginalization. The phenomenon of development induced displacement underscores the need for inclusive planning processes that consider the rights and needs of affected communities.¹⁰

8 Adalah – The Legal Center for Arab Minority Rights in Israel, “Objection to the Eastern Ring Road Plan for Jerusalem,” Adalah.

9 Bimkom – Planners for Planning Rights, “Eastern Ring Road,” Bimkom, accessed March 19, 2025.

10 Frank Vanclay, “Project-Induced Displacement and Resettlement: From Impoverishment Risks to an Opportunity for Development?” *Impact Assessment and Project Appraisal* 35, no. 1 (2017): 3–21.

Ring road

Intersection with Arab neighborhoods



1. Issawiya

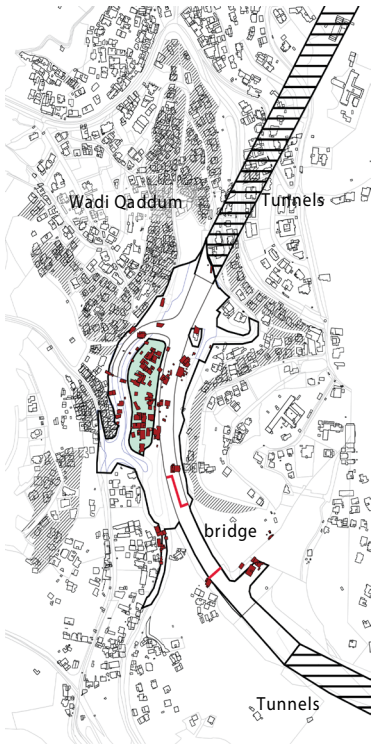


2. A-tur

4. Tunnels and bridges



5. Tzur bahr



■ for demolishing

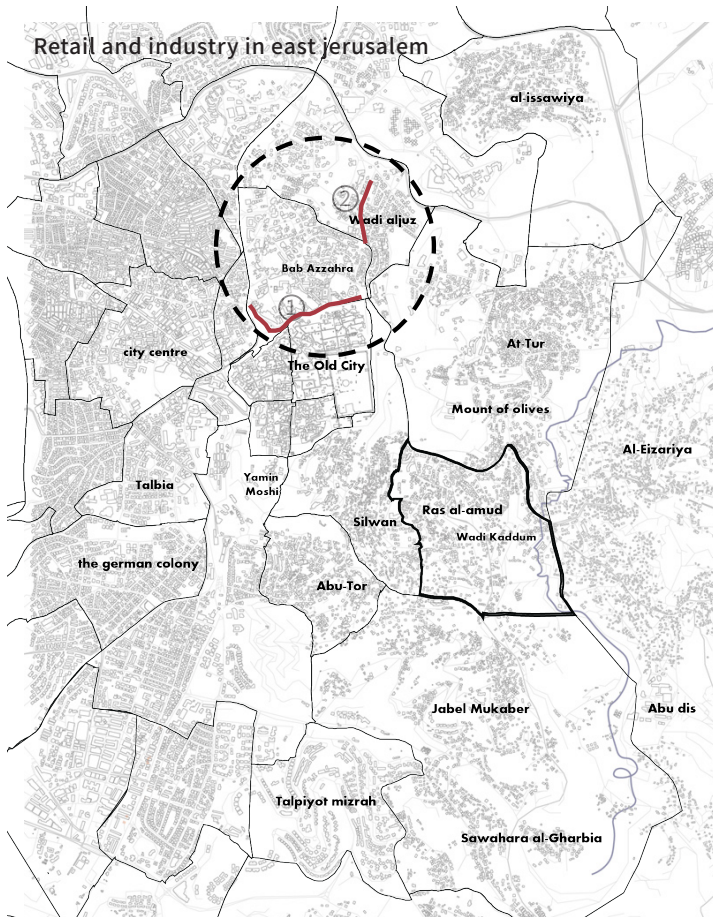
3. Wadi Qaddum

■ green area

Ring road

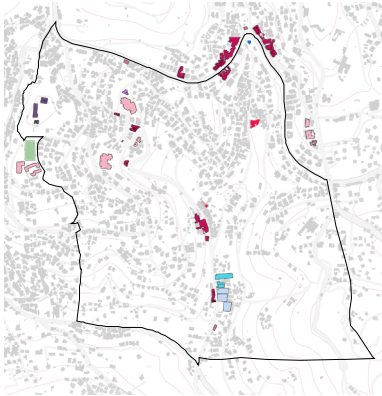
official visualizations



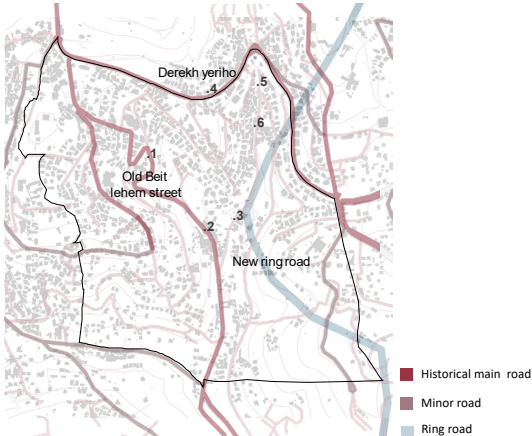


1. Sultan Suliman street, retail and shops
2. Wadi Aljuz industrial area and garages

The planning policies implemented following the annexation of East Jerusalem, has contributed to a physical and cognitive disconnect between the city's east and west.



Few Existing uses in Wadi Qaddum



Narrow streets and alleys











social solidarity

The social structure

A bottom-up approach to understanding urban spaces reveals the intricate social structures that sustain communities beyond physical infrastructure. If we shift our focus to the lived experiences of the residents—how they navigate, interact, and support one another—it becomes evident that social relations and solidarity form an essential infrastructure. This informal network not only sustains daily life but also enables resilience.

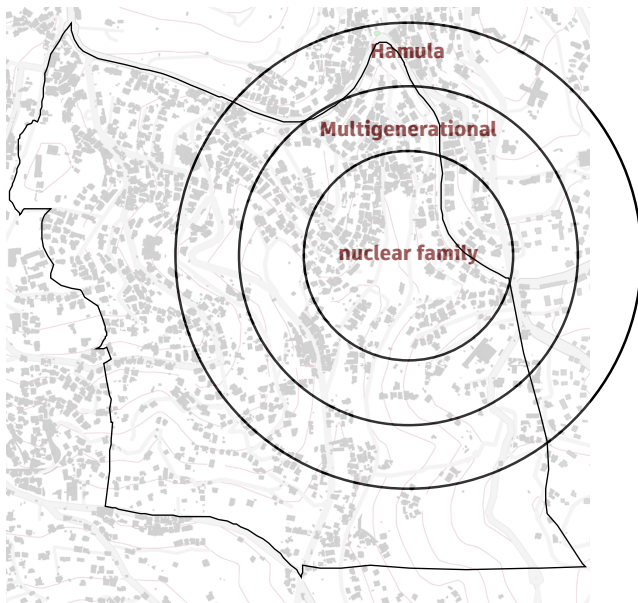
Ash Amin (2014) argues, infrastructures are not merely physical systems but also social constructs that shape community relations and agency. The imposition of formal infrastructure in Wadi Qaddum without integrating the existing informal systems that sustain the neighborhood reflects a profound disconnect between institutional planning and local needs.

Instead of reinforcing the social and economic fabric of the area, such top-down interventions often disrupt the organic mechanisms that enable community survival.¹²

One of the key aspects of this informal infrastructure is the role of the *hamula* (extended family) system, which structures land use and housing construction.

In the absence of formal permits, families organize strategies to allocate land and manage construction, ensuring the continuity of the community's spatial organization. Additionally, small-scale commercial and service networks, often unrecognized by authorities, provide employment opportunities and economic resilience (Stavrides, 2016).

12 Ash Amin, "Lively Infrastructure," *Theory, Culture & Society* 31, no. 7–8 (2014)



Multigenerational family

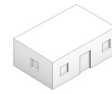
community-Driven Informality

Since 1970, few formal master plans or infrastructure developments have been implemented for the urban space of Wadi Qaddum. In parallel, residents have developed alternative infrastructures to sustain their daily lives.

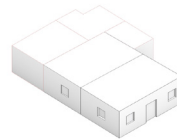
Stavrides (2016) introduces the concept of commoning—the communal production and maintenance of shared spaces as a response to exclusionary urban policies.¹³

This framework is particularly relevant to understanding how the Wadi residents negotiate their right to space, if we look Beneath the surface of the visible structures I mentioned before, hidden social ties further strengthen the community through various cooperative agreements.

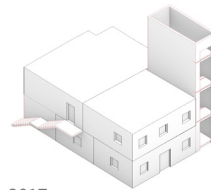
At a broad level, multiple families collaborate for the collective benefit of the neighbourhood, often donating portions of their private property for shared spaces such as mosques and communal courtyards. On a smaller scale, families living in close proximity frequently engage in agreements to construct shared elements such



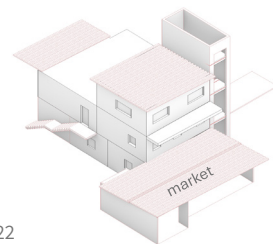
1977
construction of basic units



1987
Adding units. First Penalty 74,000



2004-2017
Separating the second floor for 2 houses
second Penalty 60,000 shekel.



2022
Adding third unit. third Penalty 60,000 shekel

Multigenerational family house growth

¹³ Stavros Stavrides, *Common Space: The City as Commons* (London: Zed Books, 2016).

as retaining walls or communal staircases—essential for navigating the area’s challenging topography.

These cooperative efforts, though unrecognized by formal planning authorities, serve as the real infrastructure that enables daily life in Wadi Qaddum.

Jabareen (2015) argues that Arab urbanism in East Jerusalem is defined by the tension between insurgent planning practices and state-imposed legal constraints.

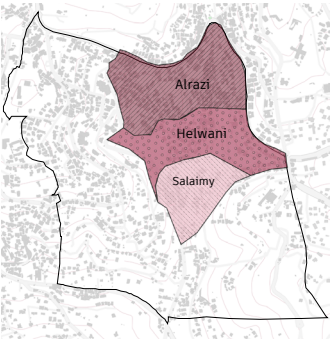
The informal infrastructures of Wadi Qaddum reflect the residents’ right to space production, resisting displacement and creating functional spaces that meet their needs.

This resilience highlights the strength of the community’s social infrastructure, and it highlights the importance of integrating informal systems into formal planning processes, as ignoring these systems risks undermining the community’s survival and well-being.



social solidarity

Public interest



families structure

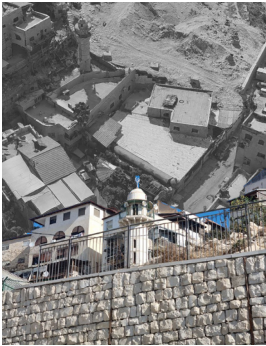
The neighborhood is informally divided into three areas, each primarily associated with a different ha-mula, reflecting the deep-rooted familial ties that shape the social fabric. Additionally, the Wadi Qad-dum Committee, composed of local leaders, actively contributes to resolving social disputes, addressing community challenges, and navigating complex issues related to building permits and house demolitions.



Public interest



mosques



Controlled Public interest

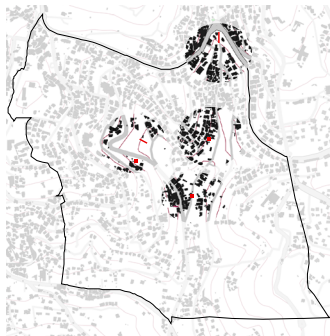


public uses

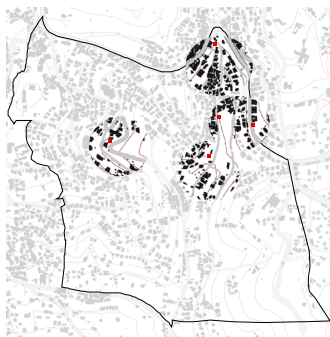


social solidarity

Public interest



semi-Public interest



semi-Public interest



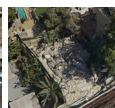
Landscape of destruction



stairs



retaining walls



demolishing remains



demolished parts

Intersection of the Formal & Informal

Intersection of the Formal & Informal

The interaction between formal and informal spatial creation questions the nature of their intersection. In Wadi Qaddum, considering the ring road as part of the formal infrastructure reflects a clear imbalance of power between the authorities and the local community. The road is not an integrative element that complements the existing informal infrastructure, but rather a force that disrupts and imposes control.

The imposition of the road, alongside other redevelopment efforts, is a manifestation of the broader forces of modernization and urban control that seek to replace informal, human-scaled environments with



standardized, function-driven spaces. This development is not a negotiation between the formal and informal, but an overpowering force that seeks to displace the informal network entirely.

As Ananya Roy points out, the agenda behind such infrastructural developments often ignores the needs of the residents, treating their informal ways of living as inferior or in need of correction (Roy, 2005).¹⁴ In Wadi Qaddum, this manifests in a direct threat to the social fabric, where the stairs or the street are not just a passage but a space for social exchange, identity, and resistance.



¹⁴ Ananya Roy, "The Informal City: Between the Formal and the Unseen," *International Journal of Urban and Regional Research* 29, no. 4 (2005): 731–740.

Intersection of the Formal & Informal

David Harvey suggests, the struggle for urban space is also a struggle for social justice, where the community's right to live in a space that reflects its needs and values must be defended against top-down development.¹⁵

In the case of Wadi Qaddum, where formal infrastructure has already been approved and construction is underway, residents recognize that this infrastructure is unlikely to function effectively. This is because, at the same time, the community is facing real conditions of social and economic survival.



¹⁵ David Harvey, *Rebel Cities: From the Right to the City to the Urban Revolution* (New York: Verso, 2012).

As a result, residents are expected to continue relying on informal practices and spatial solutions, which may ultimately override or undermine the formal infrastructure.

This brings us back to the importance of temporality in the evolution of the physical space in the Wadi. Informal construction will expand toward the road itself, intensifying the friction between imposed planning and everyday life a tension that will become increasingly visible to planners, authorities, and the public.



Intervention

Planning strategy

This project proposes a counter strategy grounded in local resistance and community-based spatial production, which challenges the legitimacy of the road as a planning framework. The aim is not to accommodate the formal system, but to subvert its spatial dominance through the continued assertion of informal, bottom-up urban practices, ultimately stopping its use as a vehicular corridor. And that's by:

-Reclaiming the Surrounding Space as a Site of Resistance:

The intervention treats its surrounding area as a chance for empowerment and resistance. Vehicular traffic is redirected into the neighborhood, while the elevated section is closed to cars. The road is reappropriated as neighborhood ground—a shared resource that confronts the acute shortage of housing and public services and creates a vital communal space instead of a line of division.

-Learning from the Neighborhood's History of Bottom-Up Development:

The local construction practices themselves reflect a powerful logic of adaptability and survival. At the scale of private interest, the nuclear family expands into the multi-generational household, and eventually into the extended clan, which actively shapes the space both physically.

In many cases, street-facing façades are transformed into micro-businesses, shops, groceries, turning the house into a hybrid space of living and livelihood. This leads us to a phased building process that begins beneath the infrastructure and gradually expands until it overtakes it from above.

From this gradual, community-led process, an alternative model of development can be derived, one that deconstructs local dynamics, recognizes their strength, and uses them as a means of confronting cases in which formal planning is imposed on an existing way of life.

-program

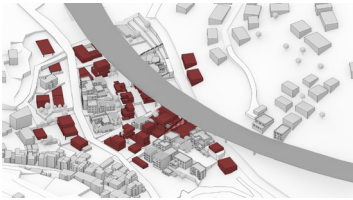
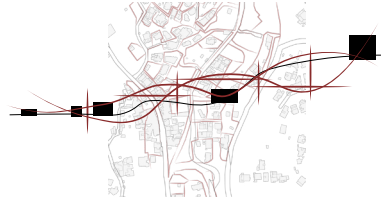
The overall design is supported by a comprehensive program aimed at strengthening the neighborhood and addressing the acute shortage of public services, housing, and educational facilities. The program proposes a diverse mix of uses—including education, commerce, employment, housing, and additional public services—with a particular emphasis on children and youth, who constitute nearly 50% of Wadi Qaddum’s population and represent its future potential.

-resistive infrastructure

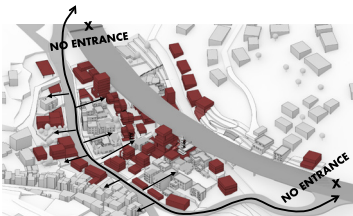
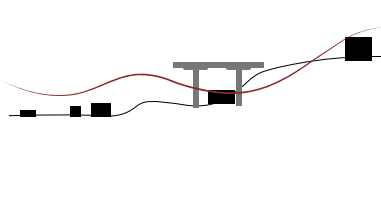
The planned intervention in Wadi Qaddum develops out of a careful reading of the points of encounter between the road infrastructure and the existing fabric of the neighborhood. At these junctions, tensions emerge between top-down planning and the everyday practices of the residents. In response to this tension, what I term “typologies of resistance” have evolved—forms of building and spatial appropriation that not only withstand external planning but also seek to appropriate and obscure it, embedding it into the life of the community.



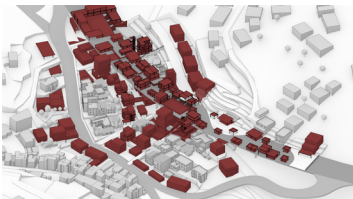
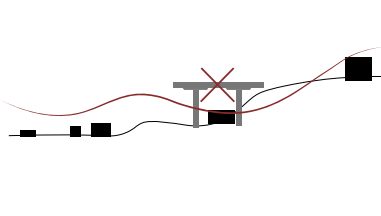
Strengthening the bottom-up powers



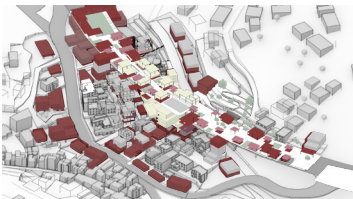
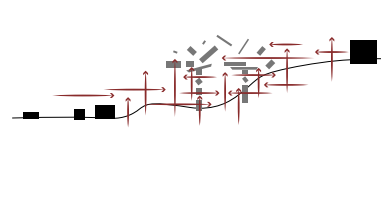
Resisting the formal infrastructure, by continuing the bottom-up development



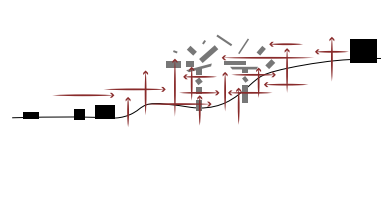
The street has lost its speed, everyday life now envelops the infrastructure



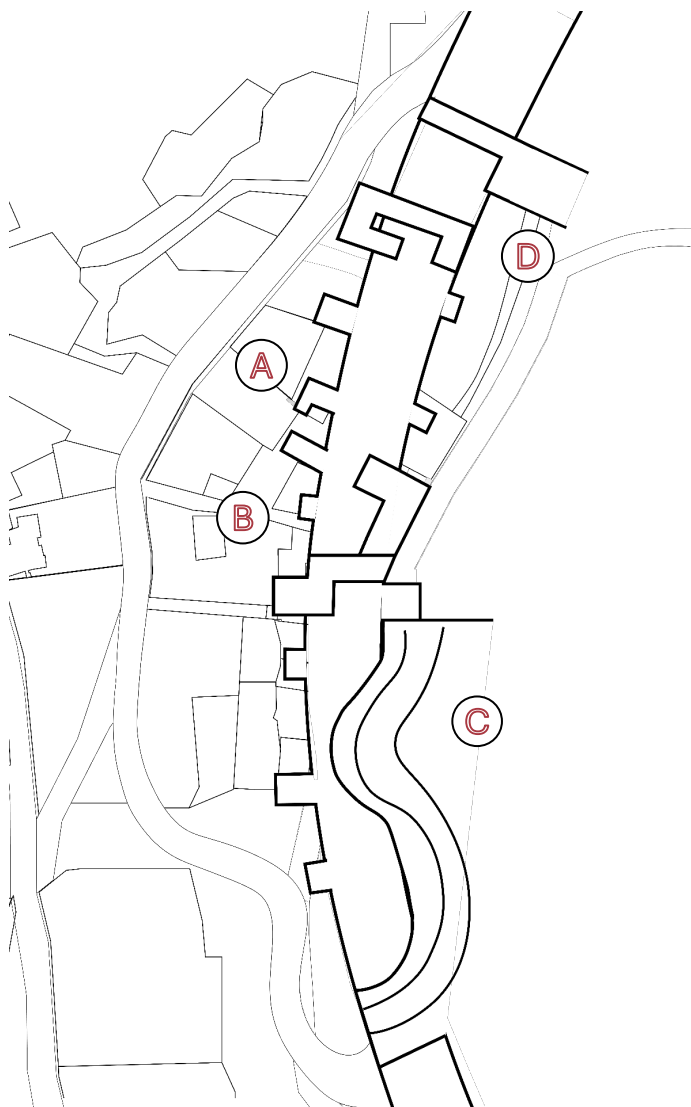
Bottom-up forces Taking over the formal infrastructure
Using it as a public economic and educational hub

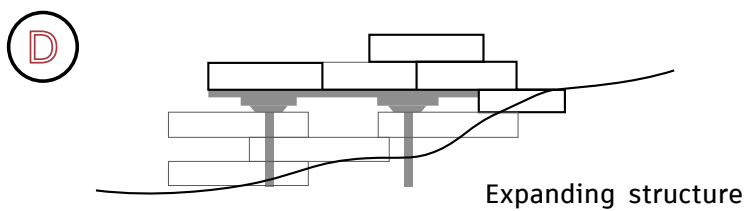
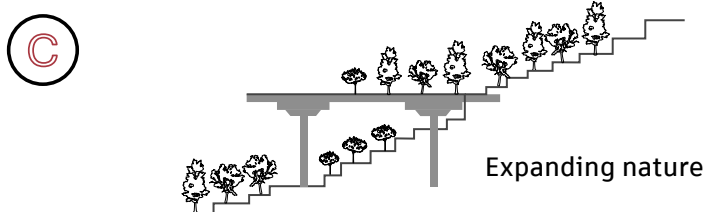
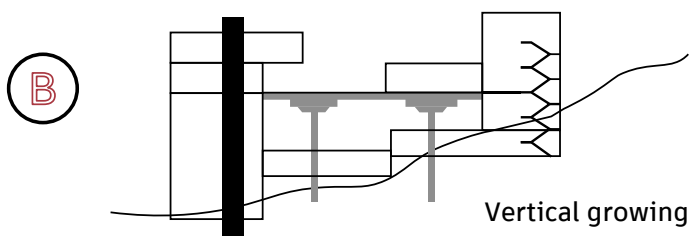
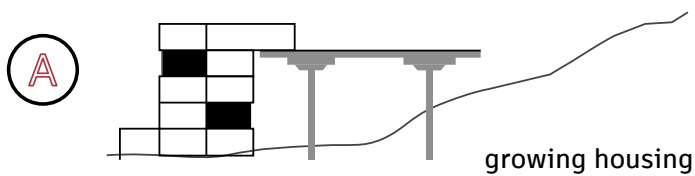


■ Retail & work ■ education ■ Residential



Resistive typologies







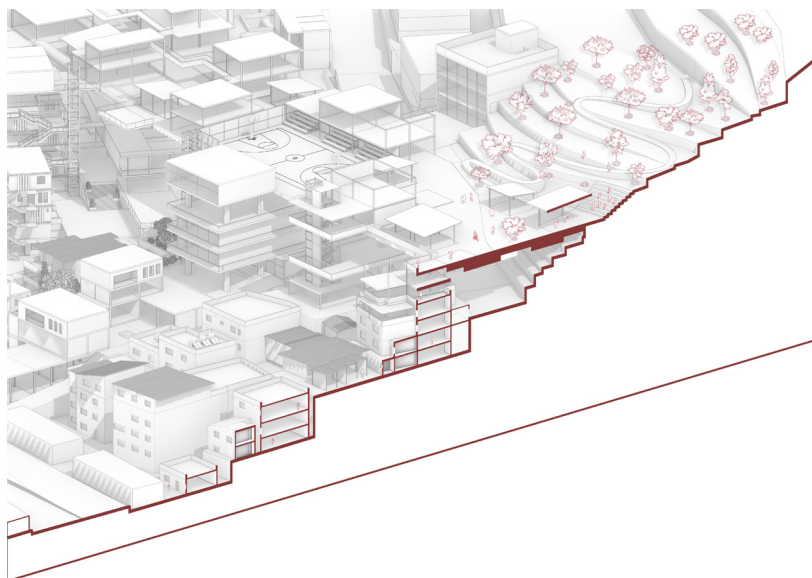
The main typologies are as follows:

A - growing Housing: Small-scale housing units (approximately 90 m²) designed for multi-generational families, with the capacity to expand incrementally. The dwellings can grow vertically or horizontally, creating new levels that integrate with communal functions. Each apartment is also provided with an open balcony, strengthening both quality of life and the relationship to the outdoor space.

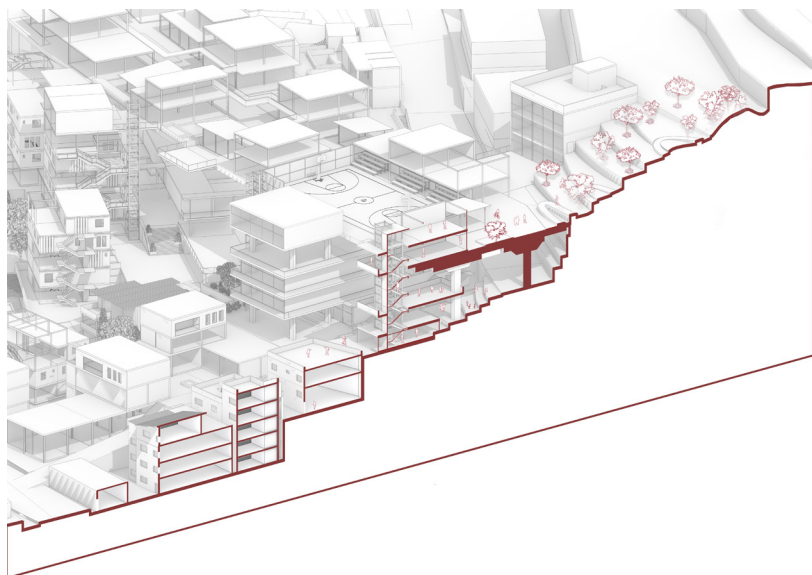
B - Vertical Growth: Structures that evolve from the ground upwards and anchor themselves to existing infrastructures, even extending onto the bridge. This typology embodies the community's agency in re-shaping and reclaiming the physical environment.

C - Spreading Nature: At points where the road meets the steep and challenging topography, the landscape itself becomes a mode of resistance. Terraces are created, cascading over the bridge to form a green and breathable park space, offering residents areas for walking, gathering, and recreation.

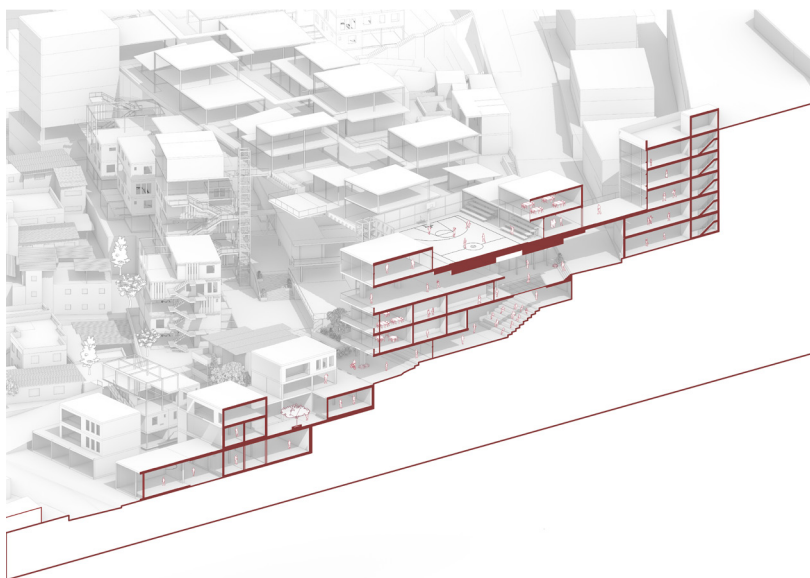
D - Climbing Structures: Architecture that directly engages with the mountainous terrain. These buildings expand progressively along the slopes, generating additional terraces and reinforcing the dialogue between the built form and the natural topography.



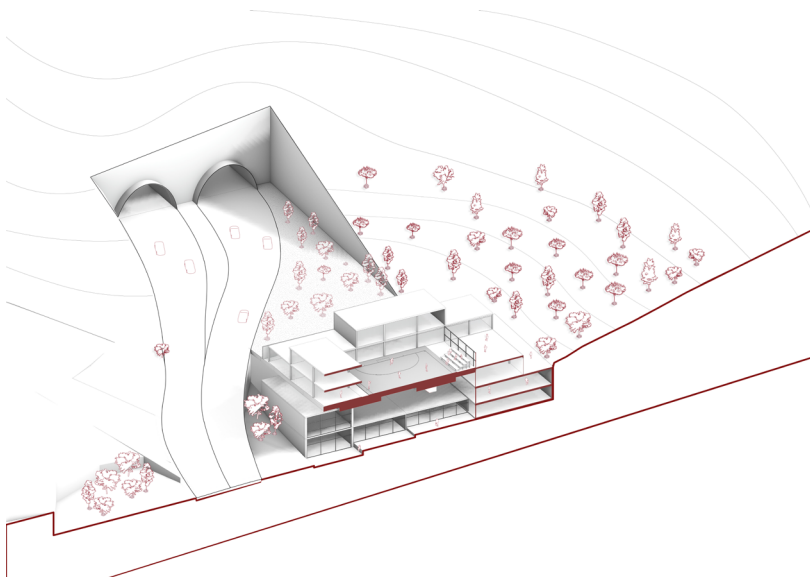
The park section



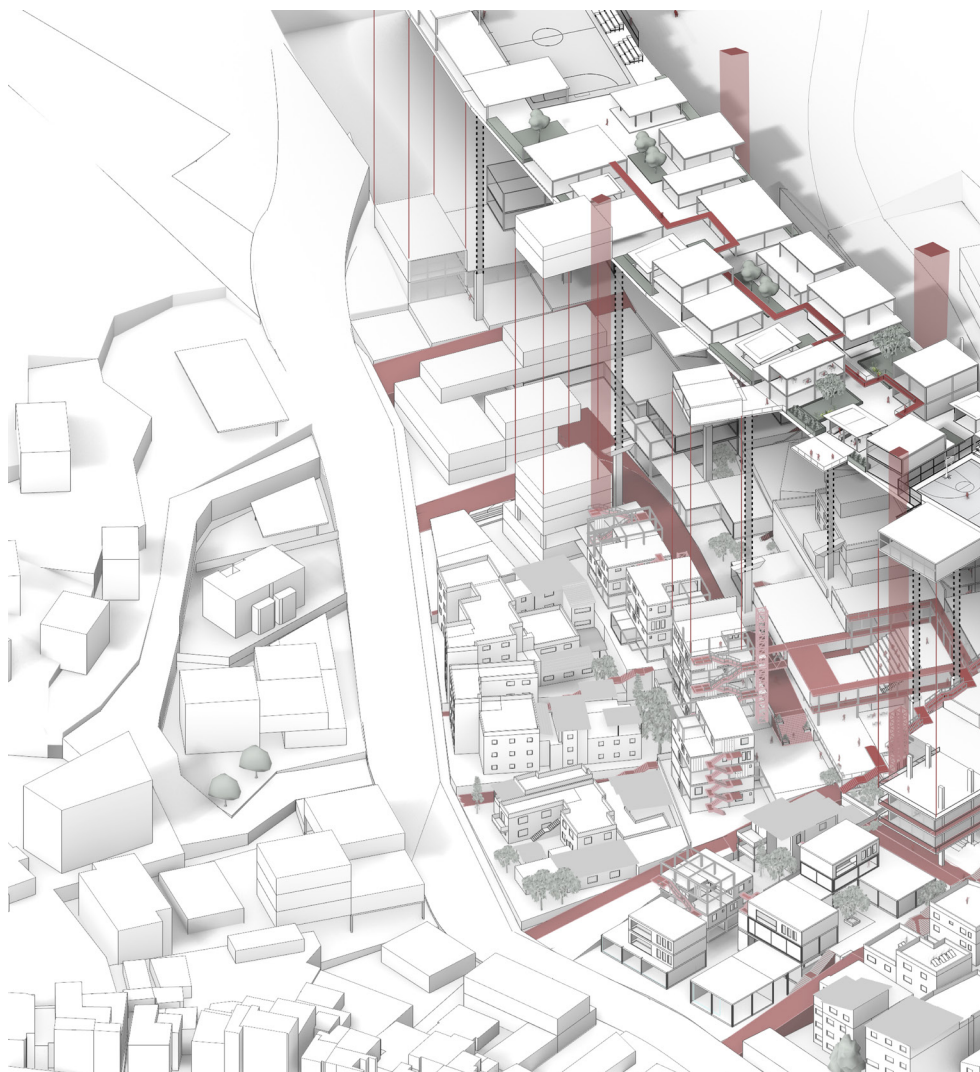
The park & youth club section



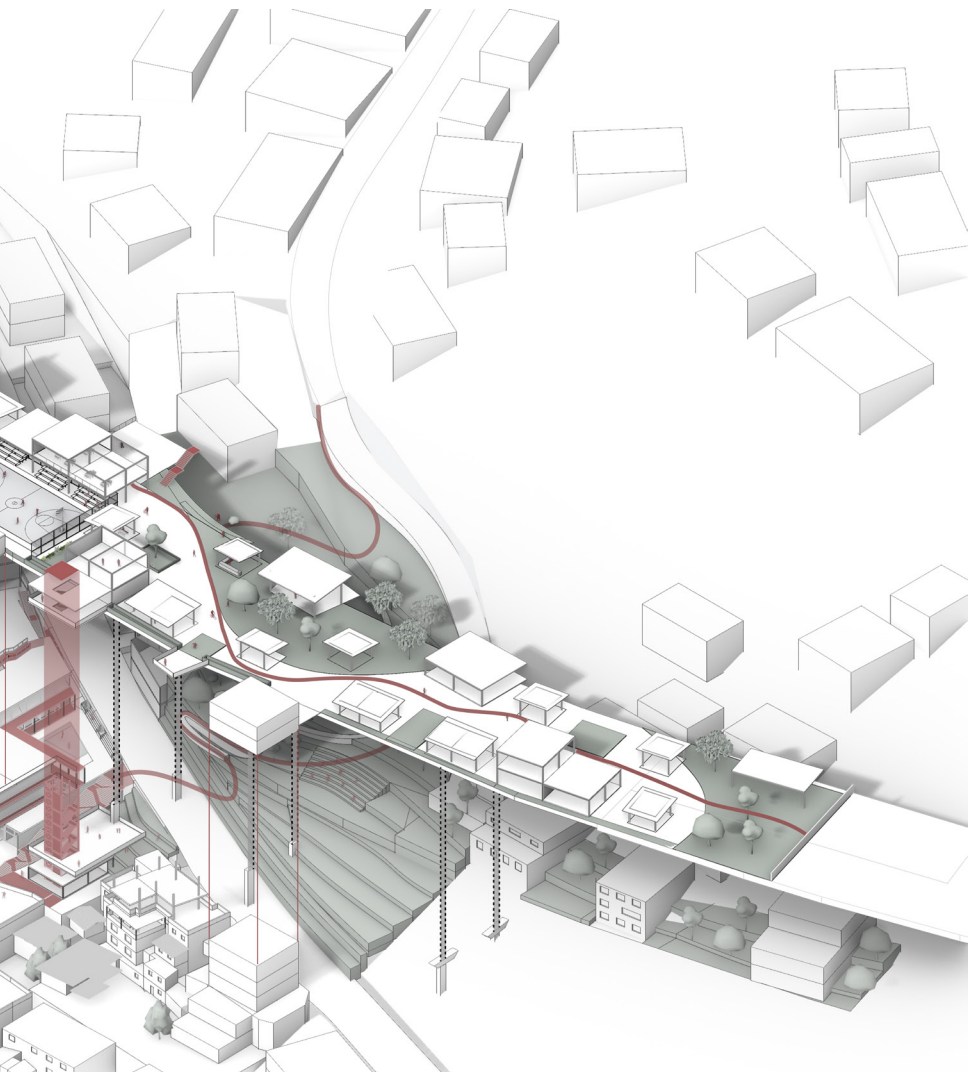
college & work spaces section



work & sport spaces section

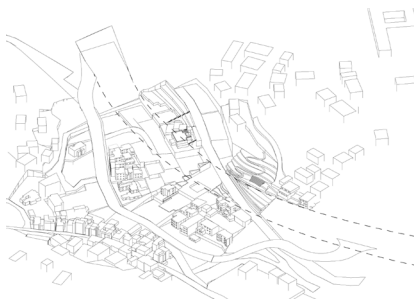


The intervention is conceived as an extension of the existing fabric rather than an external imposition. It grows out of the neighborhood's spatial logic and integrates seamlessly with it, adding new layers of housing and public life.

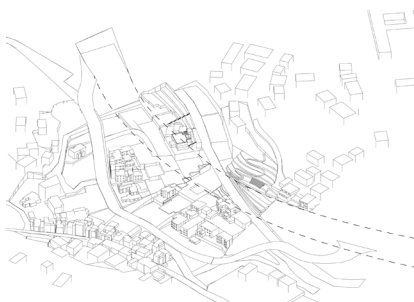


These layers are tied together by a connective system of movement and infrastructure that stitches the neighborhood vertically and horizontally—through stairways, narrow pathways, passages, and vertical circulation.

The bottom-up design approach is guided by several core principles:



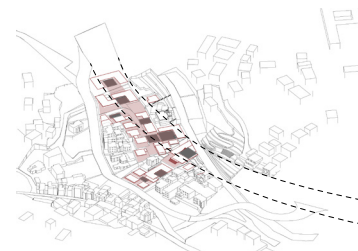
reconnecting the existing urban fabric and repairing the fractured infrastructure.



creating points of encounter and collective gathering to reinforce the culture of collaboration embedded in the neighborhood.

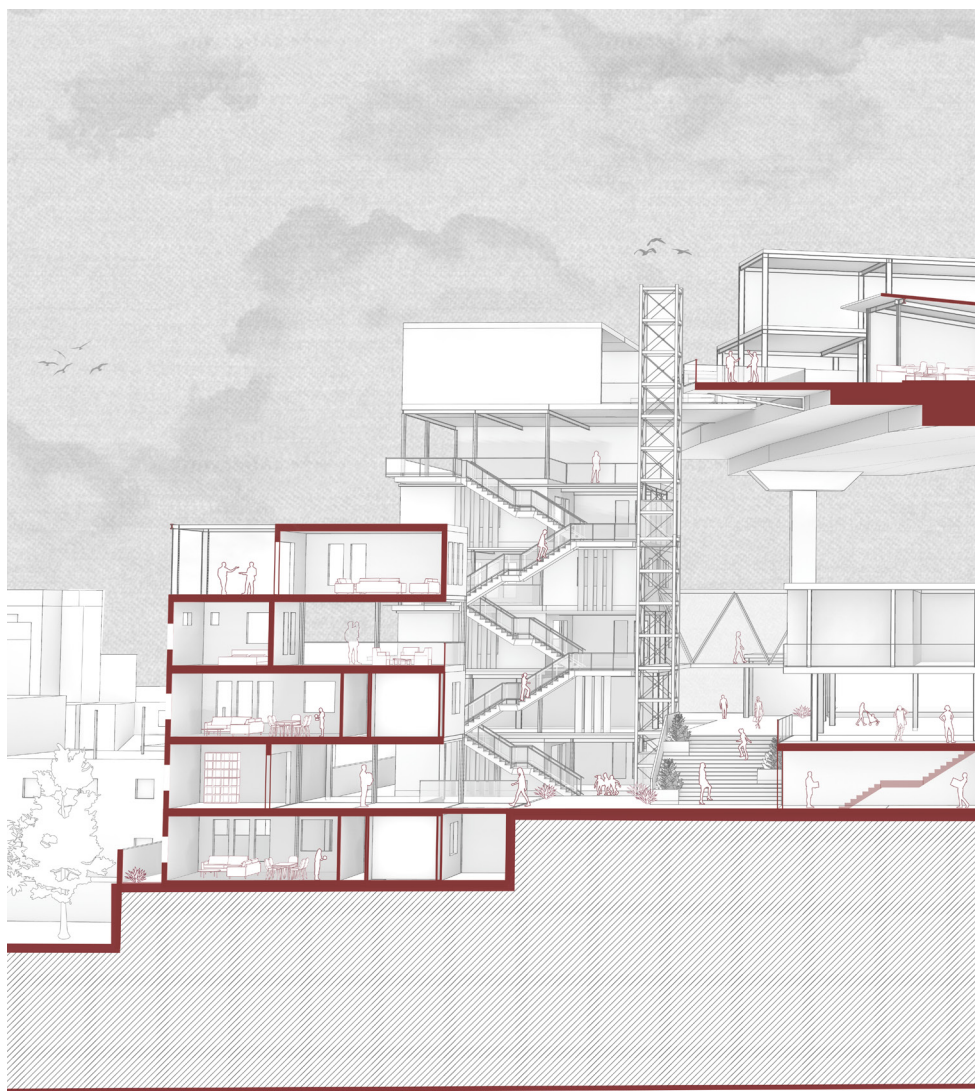


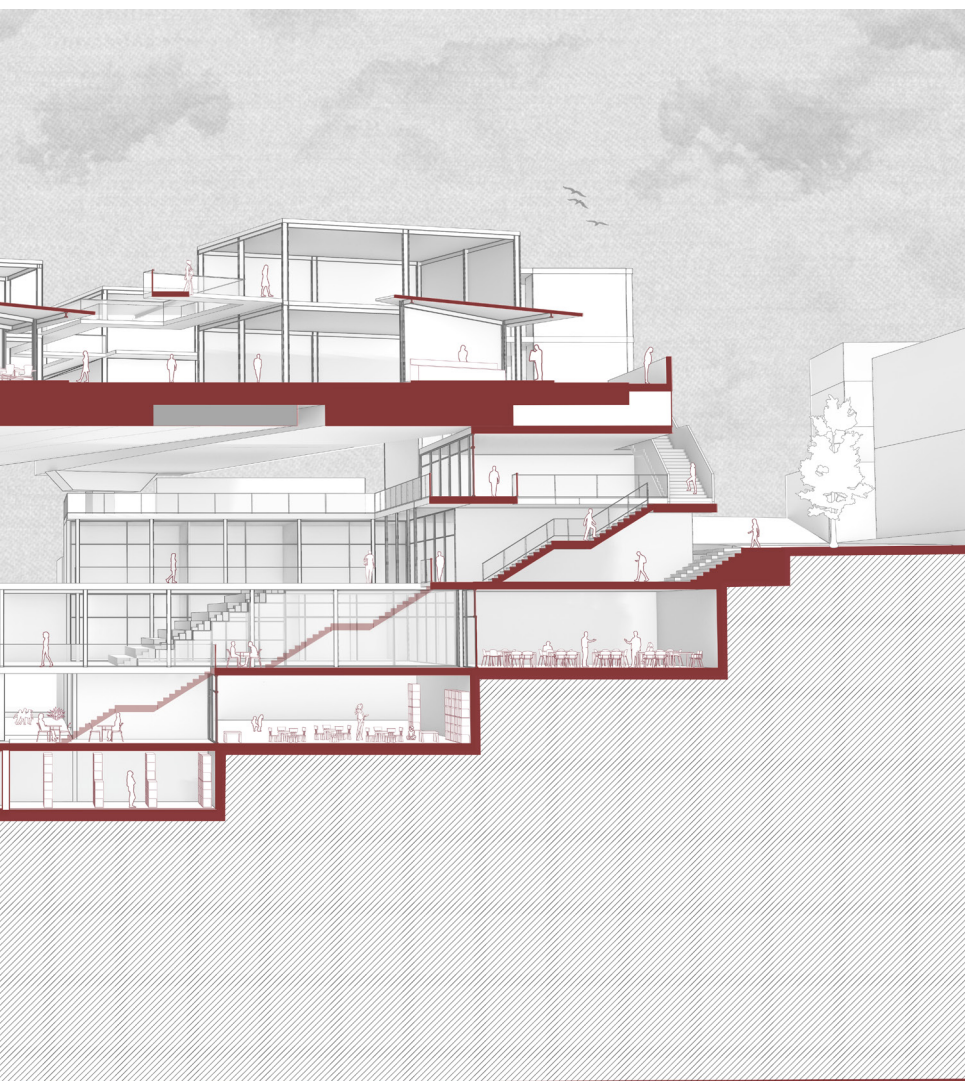
establishing a continuous, public ground level that stitches together all functions.



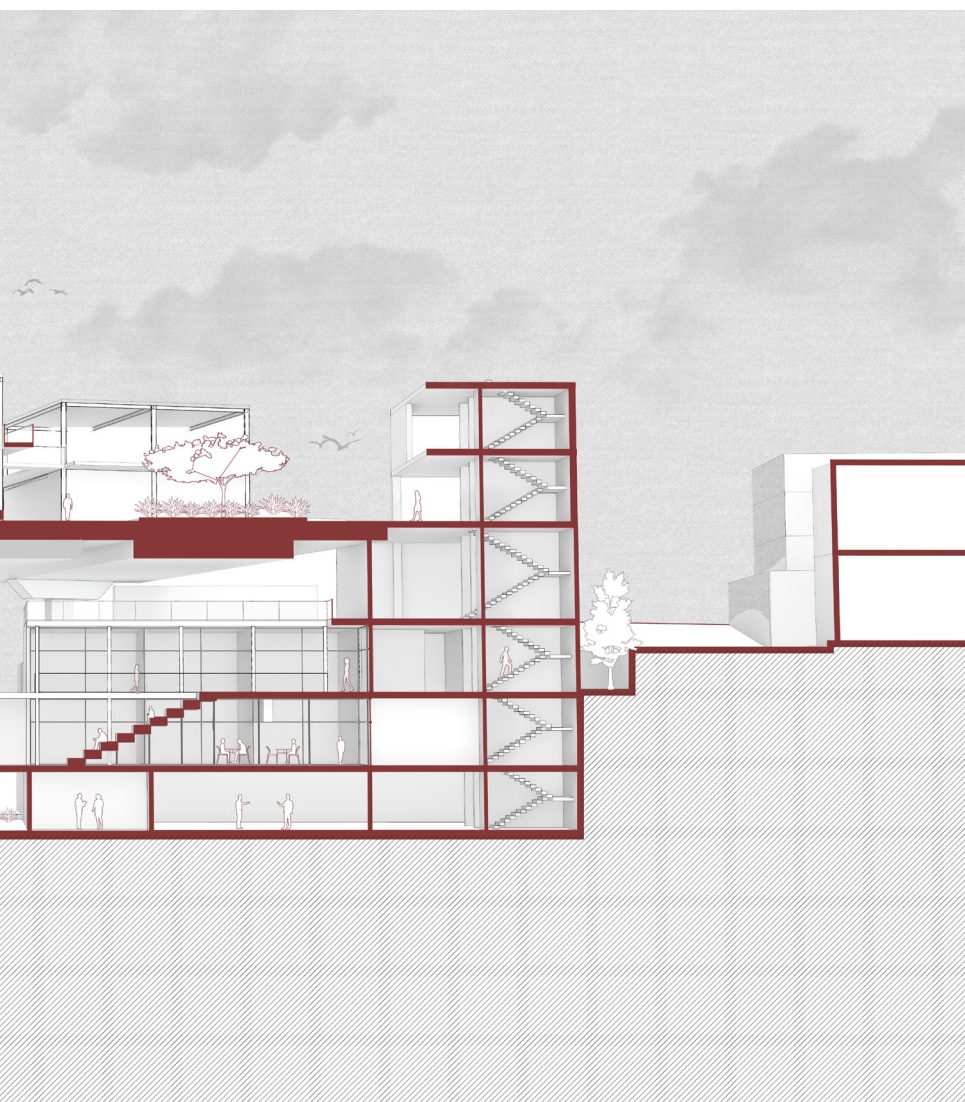


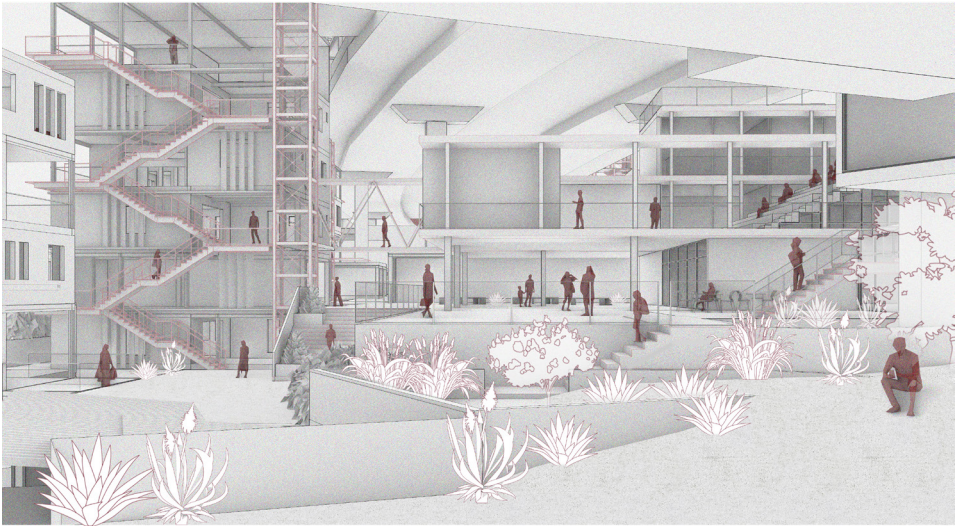
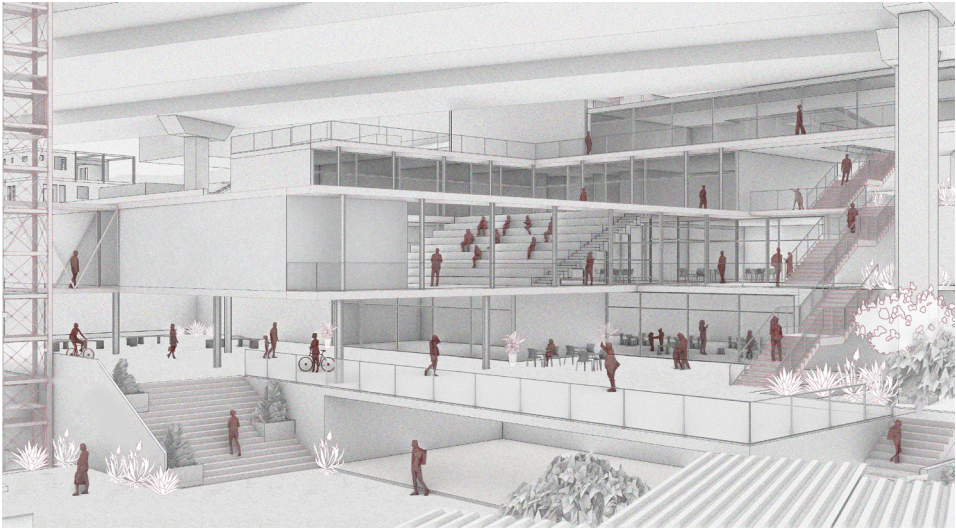
In this way, the space interweaves housing with public programs in a dynamic and intimate manner, inspired by the alleys and narrow streets that define the character of the neighborhood.

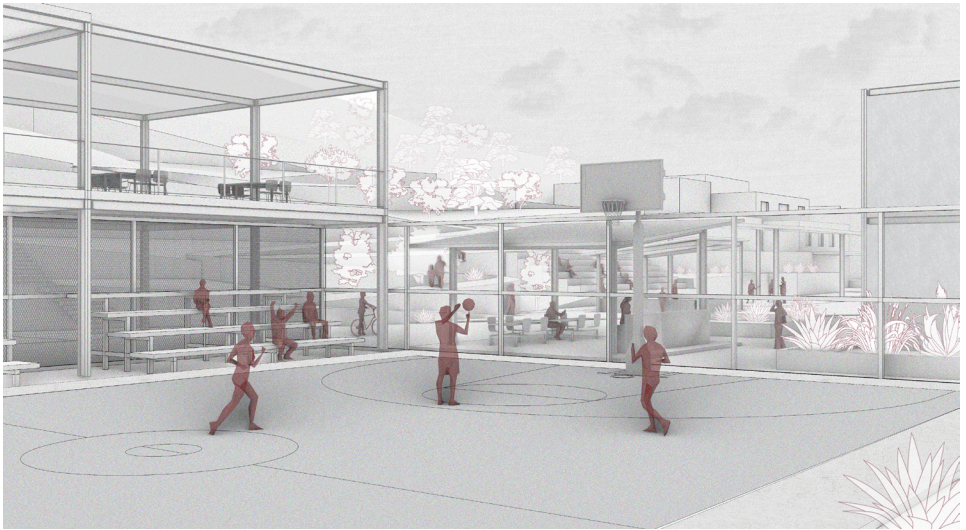
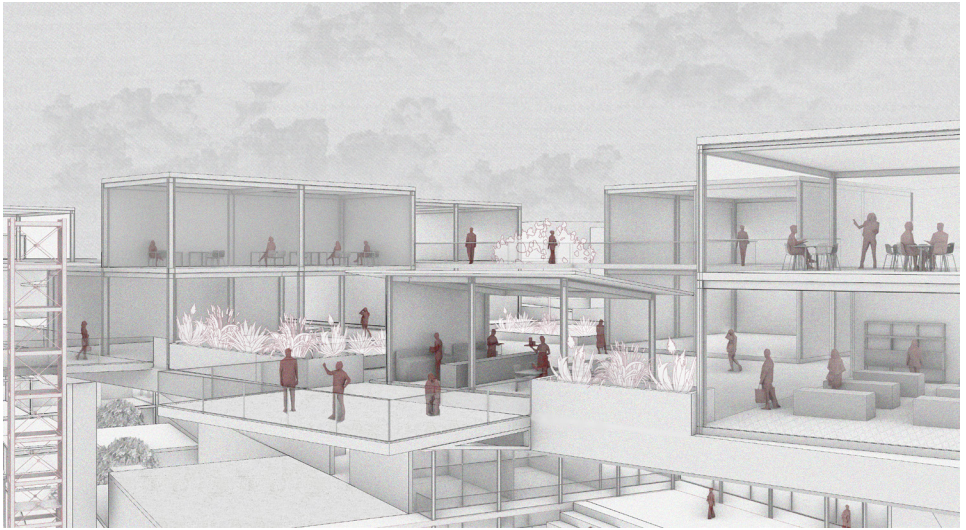


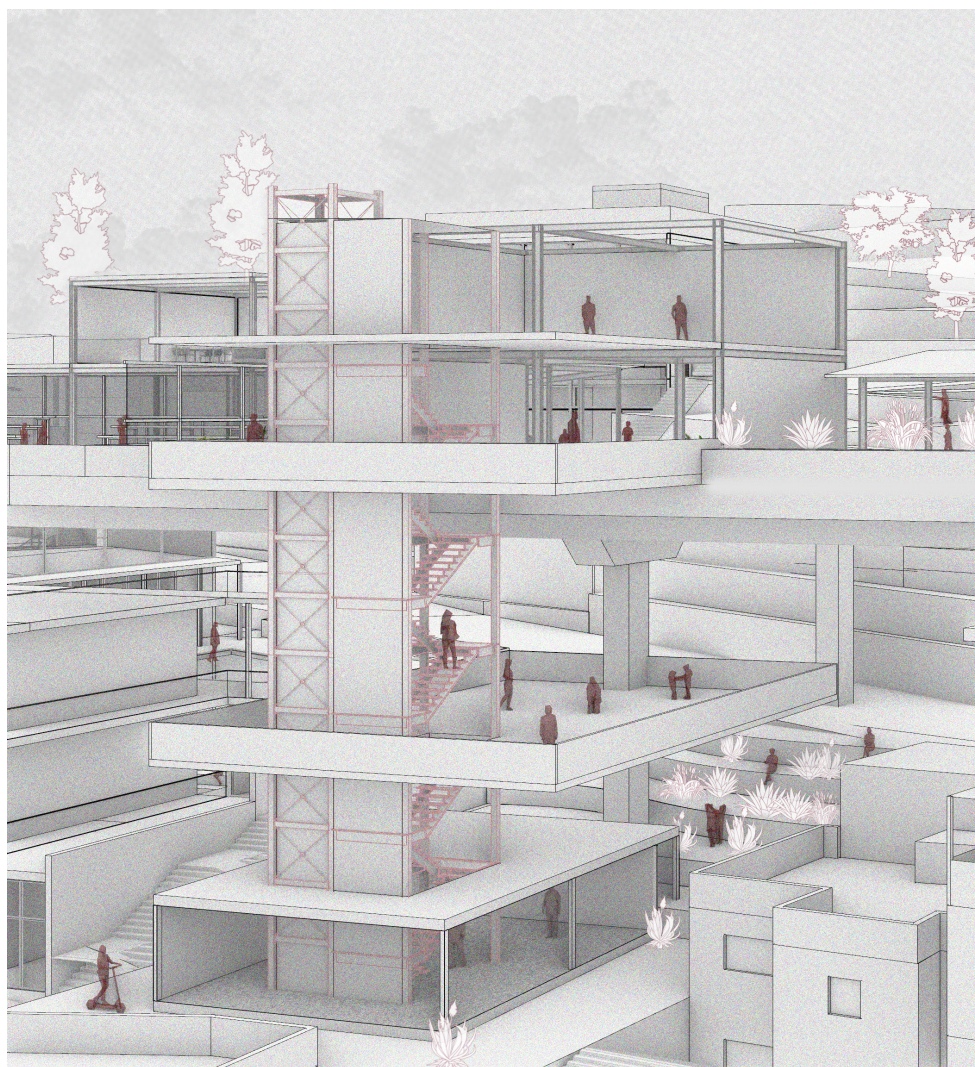


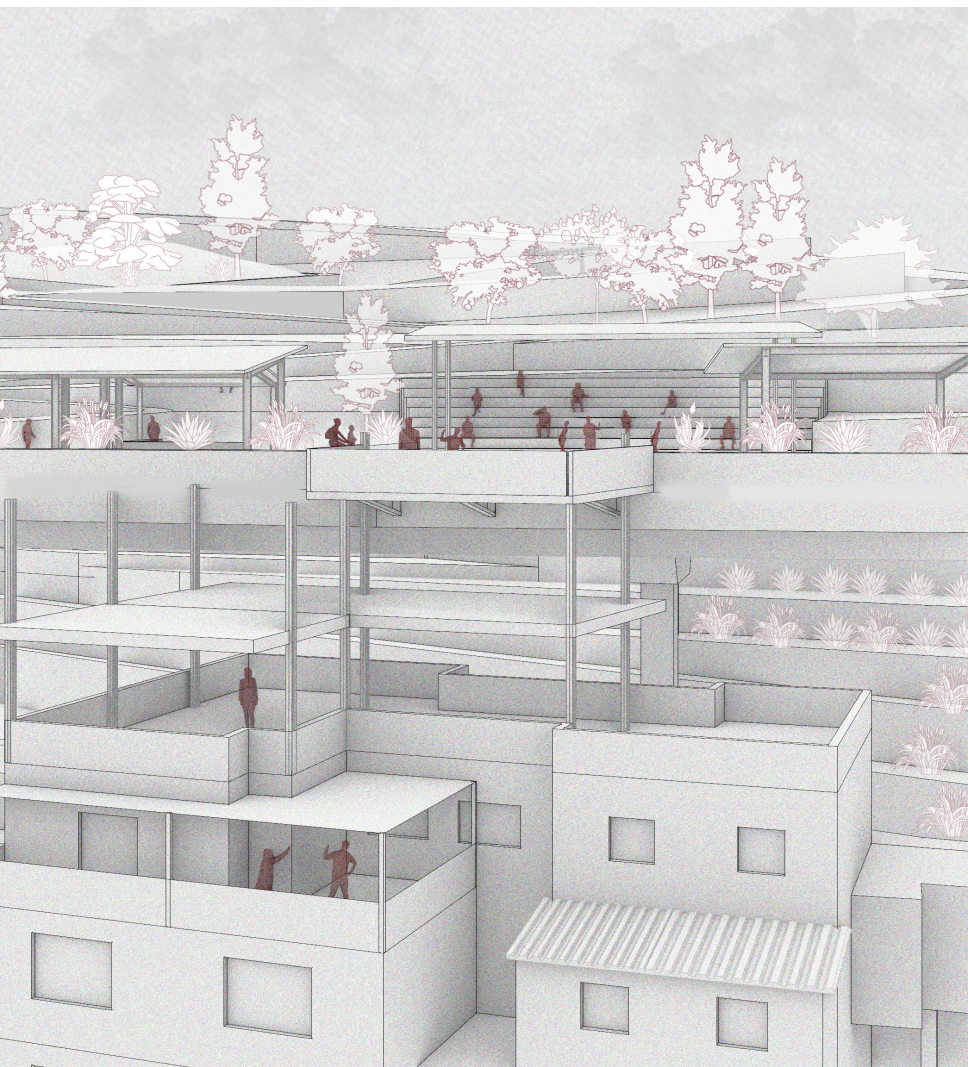












Conclusion

Wadi Qaddum exposes the profound tensions that arise when imposed infrastructure collides with community-driven urban life. The Eastern Ring Road exemplifies how state-led projects, framed as development, function instead as instruments of fragmentation, exclusion, and control. Yet the neighborhood's history of informal growth rooted in family networks, social solidarity, and incremental construction demonstrates an alternative mode of spatial production that resists erasure and sustains daily life.

By treating infrastructure not only as a technical system but as a political and social field, this project argues for a design approach that reclaims imposed spaces as sites of resistance, empowerment, and commoning. The proposed strategies do not seek to integrate passively within the formal planning regime but to subvert its dominance, transforming the road into an extension of the neighborhood rather than a barrier against it.

Ultimately, Wadi Qaddum challenges dominant urban paradigms in conflict zones by foregrounding the agency of marginalized communities. Its informal infrastructures are not temporary fixes but active forms of urban citizenship asserting the right to the city, the right to continuity, and the right to produce space on their own terms.

Bibliography

Amin, Ash. "Lively Infrastructure." *Theory, Culture & Society* 31, no. 7–8 (2014): 137–161.

Ananya Roy, "The Informal City: Between the Formal and the Unseen," *International Journal of Urban and Regional Research* 29, no. 4 (2005): 731–740.

Asmar, Ahmad. *Ras al-Amud and the Wadi Qaddum Sub-Neighborhood: Infrastructure Research and Evaluation of Arab Neighborhoods in East Jerusalem*. Jerusalem Institute for Policy Research, 2020.

David Harvey, *Rebel Cities: From the Right to the City to the Urban Revolution* (New

Dumper, Michael. *Jerusalem Unbound: Geography, History, and the Future of the Holy City*. New York: Columbia University Press, 2014.

Stavrides, Stavros. *Common Space: The City as Commons*. London: Zed Books, 2016.

Jabareen, Yosef. "The Right to Space Production and the Right to Necessity: Insurgent versus Legal Rights of Palestinians in Jerusalem." *Planning Theory*, July 2015.

Vanclay, Frank. "Project-Induced Displacement and Resettlement: From Impoverishment Risks to an Opportunity for Development?" *Impact Assessment and Project Appraisal* 35, no. 1 (2017): 3–21.

websites

Adalah – The Legal Center for Arab Minority Rights in Israel. "Objection to the Eastern Ring Road Plan for Jerusalem." Adalah. Last modified March 2, 2008. <https://www.adalah.org/en/content/view/6716>.

Bimkom – Planners for Planning Rights. "Eastern Ring Road." Bimkom. Accessed March 19, 2025. <https://bimkom.org/יחזמה-תעבטה-שיבכ/2/>.

Ir Amim. "Permanent Residency: A Temporary Status Set in Stone." June 1, 2012. <https://ir-amim.org.il>

Ir Amim. "Urban Planning." Ir Amim. Accessed March 19, 2025. <https://www.ir-amim.org.il/en/issue/urban-planning>.

https://www.palestine-studies.org/ar/node/1652291?utm_source=chatgpt.com

